

(12) UK Patent Application

(19) GB

(11) 2 261 173⁽¹³⁾A

(43) Date of A publication 12.05.1993

(21) Application No 9221347.9

(22) Date of filing 12.10.1992

(30) Priority data

(31) 07776631

(32) 15.10.1991

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(51) INT CL⁸

A61H 3/04

(52) UK CL (Edition L)

A6M MEA

(56) Documents cited

None

(58) Field of search

UK CL (Edition K) A6M M21E

INT CL⁸ A61H 3/00 3/04

Online database: WPI

(54) Walker having retrofit wheels and brakes

(57) The invention provides a kit for converting a conventional unwheeled walker 10 into a walker having wheels and brakes. Hand brakes of the type used with bicycles are releasably clamped to the handles 20, 22 of the walker. Cables 40, 60 extend from each hand brake to a brake assembly of the type used in bicycles. Each brake assembly includes a pair of brake pads 34/36, 48/50 positioned on opposite sides of their associated caster wheels 30, 50. The pads frictionally engage the wheels when the brake handles 38, 58 are squeezed so that the wheels cannot rotate.

To carry out the conversion, the caps are removed from the lowermost end of each walker leg 12, 14, 16, 18 and the stems 70 of the caster wheels 30, 50 are inserted into the hollow interiors of the legs. Each stem 70 has diametrically extending throughbores formed in it. The legs are provided with vertically spaced diametrically extending throughbores 72 as well, and pins extend through aligned throughbores to vertically adjust the height of the walker. A tray 66 is releasably attachable to the walker 10 in a stored position, a seat-providing position, or a tray-providing position.

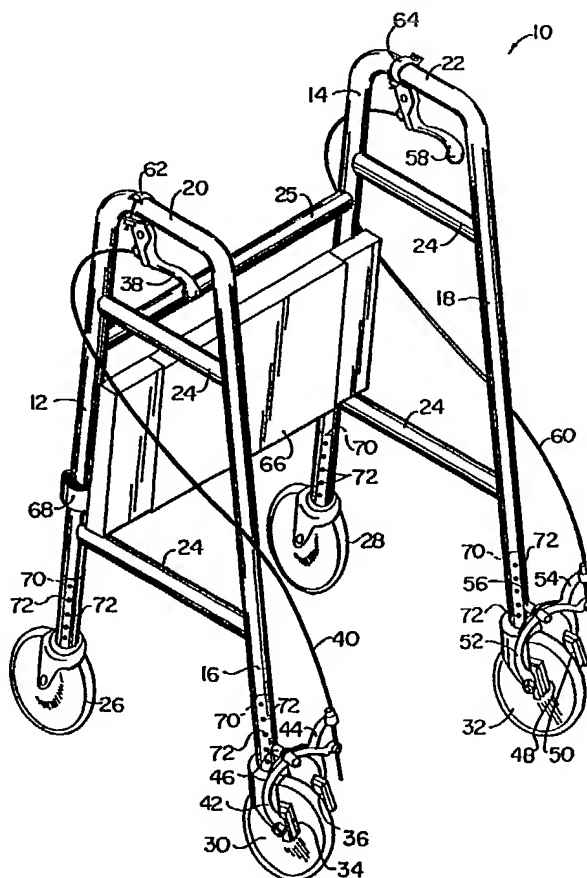


FIG. 1

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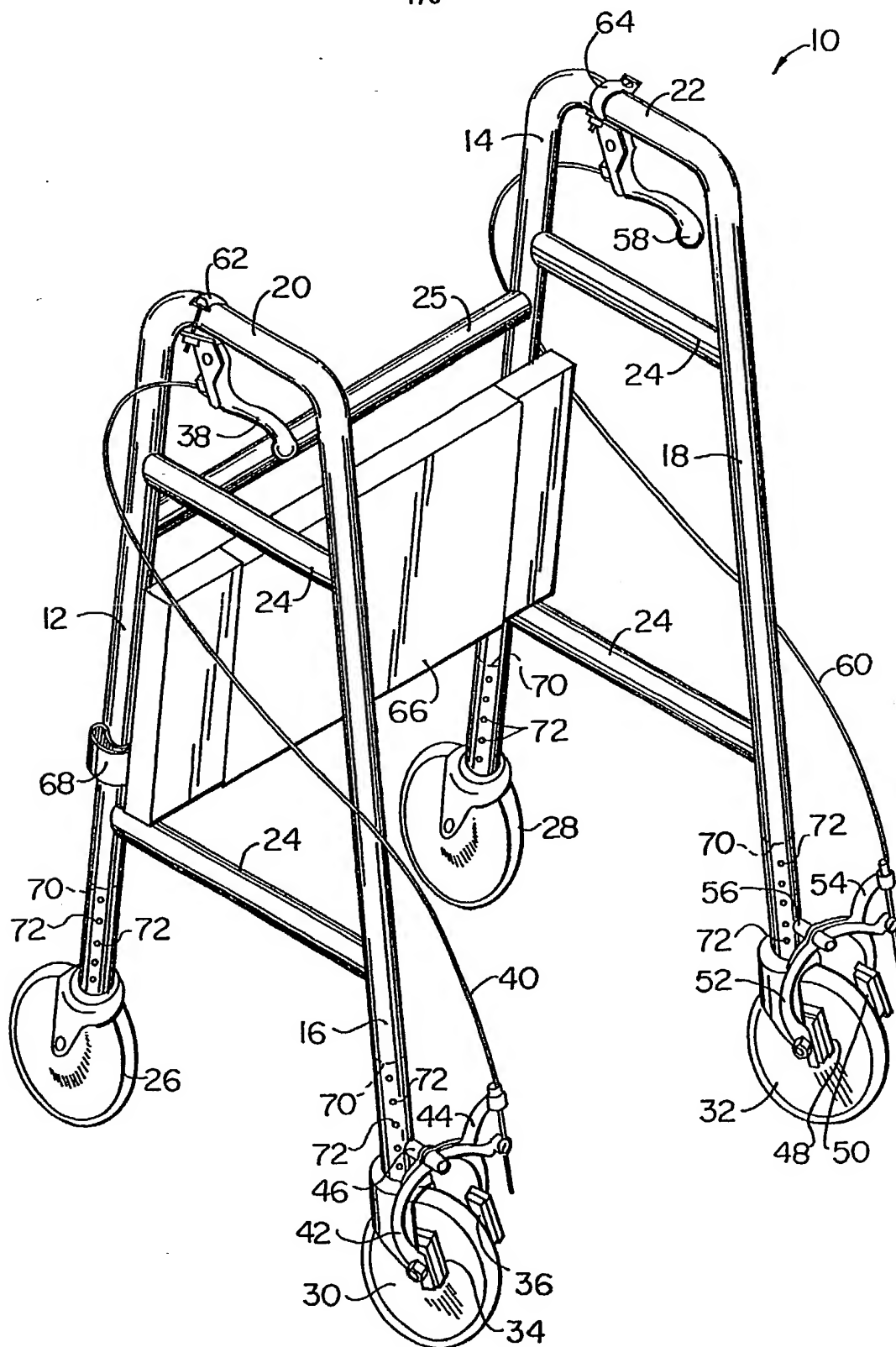


FIG. 1

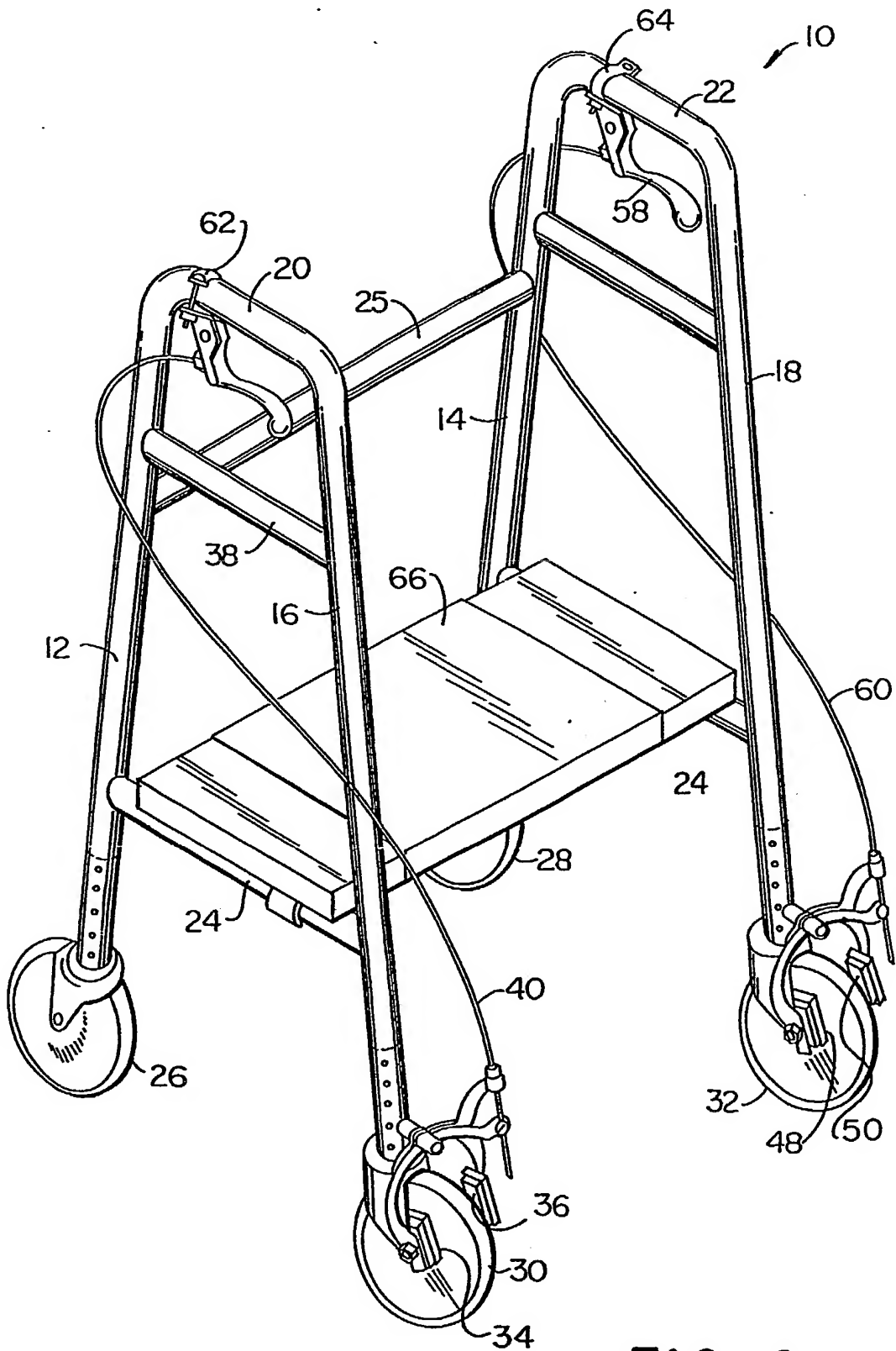


FIG. 2

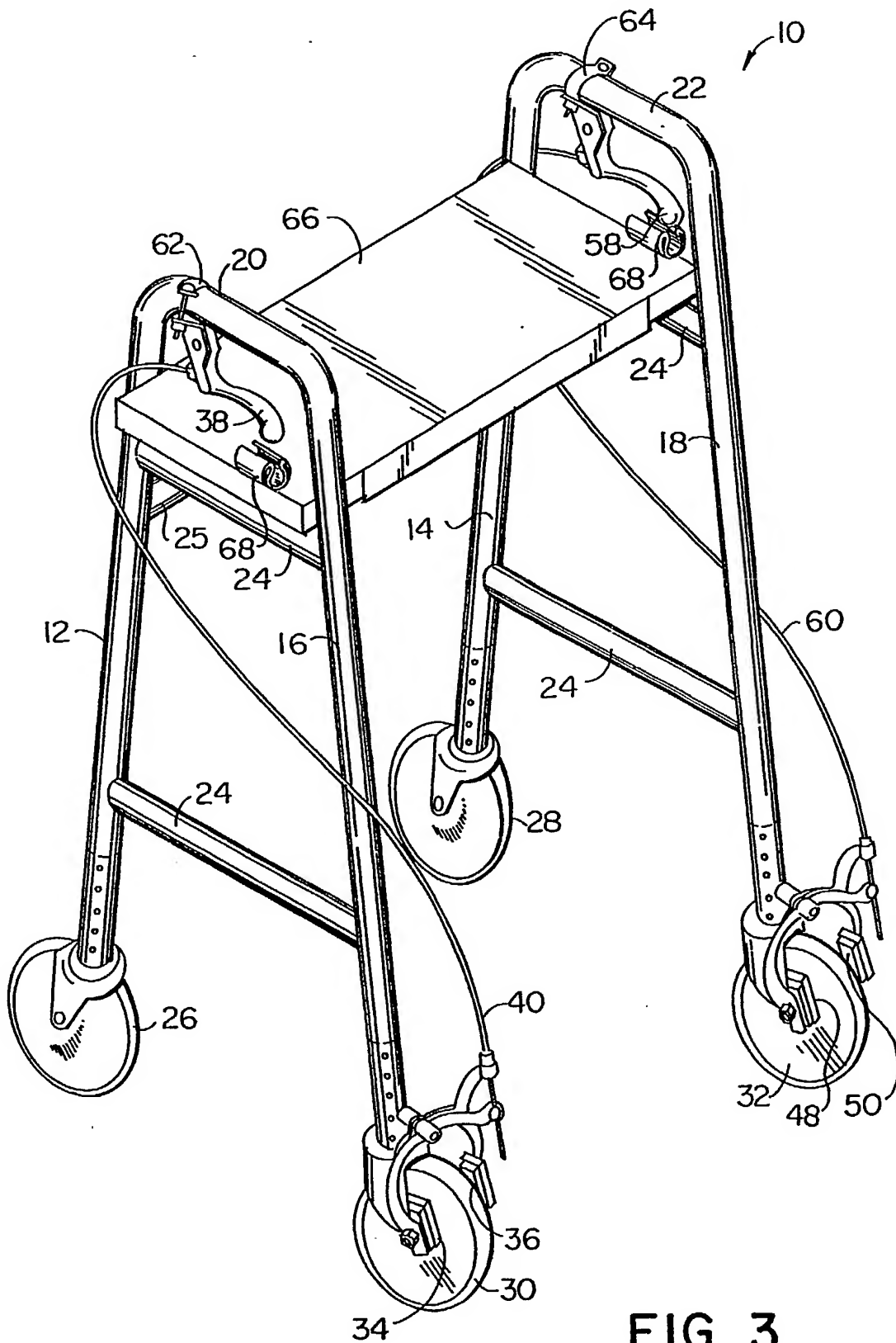


FIG. 3

WALKER HAVING RETROFIT WHEELS AND BRAKES

BACKGROUND OF THE INVENTION

1. Field of the Invention

5 This invention relates, generally, to medical appliances. More particularly, it relates to a kit for converting a conventional walker into a walker having wheels and brakes.

2. Description of the Prior Art

10 Walkers are rigid devices that assist people in walking. Typically, they are light in weight devices that have four legs and a pair of hand grips. An individual who experiences difficulty in walking positions the walker a step or two ahead, holds onto the walker, and walks toward it. Once the position of the walker is achieved, the individual lifts it up, advances it in the direction
15 of travel, and repeats the procedure.

 Thus, the walker must be lifted after each step or two. Although walkers are not heavy, they feel quite heavy after a large number of lifts; a trip of a few hundred feet may require so many lifts that the individual using the walker may have to stop to rest
20 just to allow their arms to recover. This means the individual will have to stand until his or her arms are rested; this enforced standing weakens the individual even further, and the trip soon becomes an ordeal.

 Inventors have attempted to solve this problem by adding
25 wheels to walkers. This eliminates the need to lift the walker after each unit of progress. However, the presence of wheels

destabilizes the walker; people have been known to fall because the walker rolled away from them when they tried to rely upon it for support.

Some of the wheeled walkers have brakes that are automatically applied when downward pressure is applied to the frame of the walker. The drawback with such devices is that the individual must be in a position to apply a straight downward force to set the brakes. If the individual is falling toward the walker, the brake will not set.

Thus, there is a need for a walker having wheels that can be braked without requiring the user to apply a downward force thereto.

Some individuals purchase both wheeled and unwheeled walkers. They use the unwheeled walkers for short trips because they prefer the safety and stability provided thereby, and they use the wheeled walkers for longer trips, sacrificing the safety in order to avoid the ordeal of large numbers of lifting operations.

The ownership of two walkers creates storage problems for many people. Moreover, the cost of two walkers is also somewhat high and is out of the reach of many people.

Accordingly, there is a need for a walker that can serve as a non-wheeled walker when needed, and as a wheeled walker when required. However, a single walker that can provide the function of both types of walkers does not appear in the prior art.

There is also a need for an improved braking system for wheeled walkers. Specifically, the brakes should be easy to apply

even if the individual is falling toward the walker.

Since many individuals already own a conventional, non-wheeled walker, it would be desirable if a kit could be provided that would enable such conventional walkers to be converted into wheeled
5 walkers. The conversion should be reversible as well so that a single walker could be converted back and forth from and to its wheeled and non-wheeled configurations.

Such a desirable walker does not appear in the prior art.

Significantly, the prior art, when considered as a whole in
10 accordance with the requirements of law, neither teaches nor suggests to those of ordinary skill in this art how a walker without wheels could be converted into a walker with wheels, and how a reliable braking system could be provided that does not rely upon the user of the walker to press downwardly thereupon.

15

SUMMARY OF THE INVENTION

The present invention includes a kit for retrofitting a conventional non-wheeled walker with wheels and a braking system.

The kit includes four caster wheels that have elongate stems;
20 to install the wheels, the leg covers for the four legs of a conventional walker are removed to thereby expose the hollow interior thereof. Plural diametrically extending holes are formed in each of the walker's four legs, and in the stems of the caster wheels as well. The stems are then inserted into the hollow
25 interior of their associated legs, and a nut and bolt or other suitable fastening means is employed to secure the stem to the leg.

The height of the walker is controlled by aligning the holes in the legs with the appropriate holes in the stems. A bolt is then passed through the aligned holes, and a nut is screw threadedly engaged to the bolt to secure the assembly.

5 Hand brakes of the type found in bicycle construction are then mounted to the horizontal handles of the walker. A cable extends from each hand grip to the brake assembly. Each brake assembly includes a pair of brake pads that are positioned on opposite sides of their associated wheels so that squeezing the hand grips effects
10 simultaneous gripping of the wheels by said pads.

The individual using the walker simply rolls the walker and walks with it, squeezing the hand grips to slow or stop the walker. This allows the user to walk normally without having to stop and start.

15 It will thus be seen that the primary object of the present invention is to provide a kit for converting a conventional unwheeled walker into a wheeled walker.

A closely related object is to provide a wheeled walker with a set of easy to use brakes so that the wheeled walker will be safe
20 and easy to use.

These and other important objects, features, and advantages of the invention will become apparent as this description proceeds.

The invention accordingly comprises the features of construction, arrangement of parts, and combination of elements
25 hereinafter set forth, and the scope of the invention will be indicated in the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

For a fuller understanding of the nature and objects of the present invention, reference should be made to the following detailed description, taken in connection with the accompanying drawings, within which:

Fig. 1 is a perspective view of an illustrative embodiment of the invention, showing a tray in a storage configuration;

Fig. 2 is a perspective view showing the tray in a seat-providing configuration; and

Fig. 3 is a perspective view showing the tray in a third configuration.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to Fig. 1, it will there be seen that an exemplary embodiment of the present invention is denoted as a whole by the reference numeral 10.

Walker 10 includes a pair of laterally spaced apart forward legs 12, 14, a pair of laterally spaced apart rear legs 16, 18, and a pair of handle members 20, 22, that interconnect their associated front and rear legs as shown. All legs are hollow. Longitudinal brace members, collectively denoted 24, perform the function their name expresses. A transverse brace 25 also braces the assembly.

A pair of front caster wheels 26, 28 are rotatably mounted at the lowermost end of the front legs 12, 14, and a pair of rear caster wheels 30, 32, are similarly mounted to the lowermost end of the rear legs. Brake pads 34, 36 are positioned on opposite sides

of wheel 30, in spaced relation thereto. Pads 34, 36 are brought into braking relation to wheel 30 when brake handle 38 is squeezed; said squeezing contracts cable 40 and causes brake arms 42, 44 to pivot about a pivot point defined by pivot member 46 so that pads 34, 36 are brought into frictional engagement with opposite sides of wheel 30. Note that pivot member 46 is secured to a preselected rear leg of the walker. Brake pads 48, 50, are brought into braking relation to wheel 32 in the same way, i.e., pad-carrying brake arms 52, 54 are caused to pivot about a pivot point defined by pivot member 56 upon squeezing brake handle 58 to contract cable 60.

Note that brake handles 38, 58, are secured to their respective walker handles 20, 22 by suitable removably mounted clamps 62, 64.

Note also that a tray 66 is shown in a stored configuration against forward legs 12, 14; plural clamps 68, only one of which is shown, are provided on the underside of the tray and releasably engage said forward legs as depicted in Fig. 1 to maintain the tray in said stored configuration.

Each caster wheel has a stem 70 that is telescopically received within its associated hollow leg, and each stem has plural vertically spaced throughbores that extend diametrically therethrough. A similar plurality of vertically spaced, diametrically extending throughbores 72 is formed in the lowermost section of each leg. The height of the walker is thus adjusted by aligning stem and leg throughbores as desired and by passing a pin

therethrough when the desired height is achieved.

To convert a conventional walker to the novel walker shown in Fig. 1, the rubber tips that normally cap the bottom end of each leg are removed. The throughbores 72 are then formed in each leg, and similar throughbores are formed in each caster wheel stem. Each stem is then slid into its associated hollow leg, and the height of the walker is adjusted to the desired height. The pin, which may be a bolt and nut arrangement, or any other suitable pin means, is then placed through the aligned throughbores. Brake handles 38, 58 are then clamped onto walker handles 20, 22, with clamps 62, 64, and cables 40, 60 are extended to the brake assemblies. Note that each brake assembly is mounted to its associated leg at the previously mentioned pivot member 46, 56. Thus, to convert the walker back to a conventional wheelless walker, pivot members 46, 56 which provide the pivot points for the respective brake assemblies are removed from their respective leg members, and clamps 62, 64 are loosened so that brake handles 38, 58 can be removed. The bolts and nuts are removed from the throughbores so that the caster stems may be withdrawn, and the rubber caps are placed back on the lowermost end of each leg.

Fig. 2 shows how tray 66 may be positioned with its opposite ends supported by lower brace members 24, 24. When so positioned, it serves as a seat so that the person using the walker may rest when needed.

In Fig. 3, tray 66 is supported at its opposite ends by the upper pair of brace members 24; it serves as a tray when so

positioned.

A contemplated commercial embodiment of the present invention will be provided in kit form so that existing walkers without wheels and brakes may be converted into the wheeled walker shown herein. The kit will consist of a pair of brake handles 38, 58, clamps 62, 64, cables 40, 60, and the associated pivot members 46, 56, pivot arms, and brake pads. The kit will further include four caster wheels with plural throughbores formed in the stems; the bolts and nuts will also be provided.

Single, alignable, throughbores may be formed in the lower ends of the walker legs and/or the stems of the caster wheels.

The brake handles may be secured to the walker handles other than by clamping. For example, the brake handles may have brackets mounted thereon which can be secured in place by fixing screws. However, use of the clamps 62, 64 is preferred.

The transverse brace 25 could be used to support a basket.

A transverse brace could be disposed between the front and/or rear pairs of legs, to be used as a foot rest, allowing the walker, together with the user thereof, to be pushed.

It will thus be seen that the objects set forth above and those made apparent by the foregoing description are efficiently attained and since certain changes may be made to the foregoing construction without departing from the scope of the invention, it is intended that all matters contained in the foregoing description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

5

CLAIMS

1. A method for converting a wheelless walker having four hollow legs and horizontal handles interconnecting forward and rearward legs thereof into a walker having wheels and brakes, comprising the steps of:
- 5 forming throughbores in the stems of a plurality of caster wheels;
- forming throughbores in the lowermost ends of the legs of the walker to be converted;
- 10 inserting the stems of said caster wheels into the hollow interiors of their associated hollow legs;
- aligning throughbores formed in said caster wheel stems with throughbores formed in said hollow legs;
- 15 inserting pin means through said stems and said leg bores;
- securing a pair of brake handles to each of the handles of the walker;
- positioning a brake means at each of a preselected pair of said caster wheels; and
- 20 extending an operating cable from each brake handle to its associated brake means;
- whereby squeezing said brake handles activates said brake means to prevent said wheels from rotating; and
- whereby said wheels obviate the need to lift the walker between steps.
- 25

2. A method for converting a wheelless walker having four hollow legs and horizontal handles interconnecting forward and rearward legs thereof into a walker having wheels and brakes, comprising the steps of:

forming a plurality of vertically spaced, diametrically extending throughbores in the stems of a plurality of caster wheels;

forming a plurality of vertically spaced, diametrically extending throughbores in the lowermost ends of the legs of the walker to be converted;

inserting the stems of said caster wheels into the hollow interior of their associated hollow legs;

aligning preselected throughbores formed in said caster wheel stems with preselected throughbores formed in said hollow legs;

inserting a pin means through said stem and leg bores;

clamping a pair of brake handles to each of the handles of the walker;

positioning a brake means at a preselected pair of said caster wheels; and

extending a cable from each brake handle to its associated brake means;

whereby squeezing said brake handles activates said brake means to prevent said wheels from rotating; and

whereby said wheels obviate the need to lift the walker between steps.

3. The method of Claim 1 or 2, wherein each brake means is positioned in braking relation to the rear wheels of said walker.

4. The method of Claim 1, 2 or 3, wherein each brake means includes a pair of brake pads that flank their associated caster wheel and
5 which frictionally engage each caster wheel upon squeezing of their associated brake handles.

5. A kit for converting a wheelless walker into a walker having wheels and brakes, comprising:

a plurality of caster wheels having stems;
10 each of said stems having diametrically extending throughbores formed therein;

a pair of brake handles;

a pair of brake arms associated with each of said brake handles;

15 a brake pad mounted to a free end of each of said brake arms so that a caster wheel is positioned between each pair of brake pads;

a cable extending between each of said brake handles and its associated brake arms;

20 a pair of securing means for removably securing said brake handles to the handles of said walker;

a pair of pivot point-defining pivot members for attachment to preselected legs of said walker;

25 each of said brake arms being pivotal about its associated pivot member when its associated brake handle is squeezed;

whereby diametrically extending throughbores are formed in the legs of said walker, said caster wheels stems are inserted into the hollow interior of said legs, said stem throughbores and leg throughbores are aligned and a pin is extended therethrough to lock the relative position of said stems and legs, whereby said brake handles are secured to the handles of said walker, whereby said brake pads are positioned on opposite sides of preselected caster wheels, and whereby said cables extend between said brake handles and said brake arms so that an unwheeled walker is thereby converted to a walker having wheels and brakes.

6. A kit as claimed in Claim 5, wherein a plurality of throughbores are formed in the legs of said walker.

7. A kit as claimed in Claim 5 or 6, wherein a plurality of throughbores are formed in the stems of said caster wheels.

8. A kit as claimed in any one of Claims 5, 6 or 7, provided with a support member selectively attachable to the walker so as to provide a seat or a tray, the support member also being attachable in a storage position.

9. A walker, comprising:
a pair of forward legs, a pair of rearward legs, and a pair of handle members interconnecting their associated forward and rearward legs;

a caster wheel rotatably mounted to the lowermost end of each of said legs;

a brake means associated with each of said wheels at the lowermost end of each of said rearward legs;

each of said brake means including a pair of brake pads, said pads being disposed on opposite sides of their associated wheels;

a pair of brake handles, each of said brake handles being releasably secured to its associated walker handles; and

5 a cable extending from each of said brake handles to its associated brake means so that squeezing a brake handle causes said brake pads to frictionally engage their associated wheels to prevent said wheels from turning.

10 10. A walker as claimed in Claim 9, further comprising a tray member having clamps disposed on an underside thereof, said tray member being releasably attachable to preselected parts of said walker.

15 11. A walker as claimed in Claim 10, further comprising a pair of upper brace members and a pair of lower brace members that interconnect said forward and rearward legs near an upper part and a lower part thereof, respectively, said tray member being selectively attachable to said lower brace members and said upper brace members, said tray member providing a seat when attached to said lower brace members and providing a tray when attached to said upper brace members, and said tray member being further attachable to said forward legs in a storage configuration where it does not hinder the individual using the walker.

20 12. A method for converting a wheelless walker, substantially as hereinbefore described with reference to the accompanying drawings.

25

13. A kit for converting a wheelless walker, substantially as hereinbefore described with reference to the accompanying drawings.

14. A walker provided with wheels, substantially as hereinbefore described with reference to the accompanying drawings.

Amendments to the claims
have been filed as follows

13. A kit for converting a wheelless walker, substantially as
hereinbefore described with reference to the accompanying drawings.

14. A walker provided with wheels, substantially as
hereinbefore described with reference to the accompanying drawings.

15. A wheelless walker converted into a walker having wheels
and brakes, by the method claimed in any one of Claims 1 to 4.

16. A wheelless walker converted into a walker having wheels
and brakes, from a kit as claimed in any one of Claims 5 to 8.